

# PharmaClinix<sup>®</sup>

Advanced Cosmeceuticals



***Pharmaclinix® products are produced after extensive research using a unique combination of ingredients, designed to suit Asian & Arabic skin.***

**Serum**

Lightenex® Gold serum is a powerful active balanced preparation of:

- Exfoliates
- Depigmenters

First line of che  
reduction of pig  
weeks.



**Before**

# ***Lightenex® Gold Serum***

Lightenex® Gold serum is a powerful active balanced preparation of:

- Exfoliates
- Depigmenters



First line of choice with a significant reduction of pigmentation after 3-4 weeks.



**Before**



**After**

# Lightenex® Gold Serum

Contains Depigmentation and loading vitamins & anti-oxidants for:

- Pre-Procedures
- Facial treatments

e.g. Fraxel rejuvenation or Q-switch in dermal melanosis.

## Lightenex® Gold Serum Actives DEPIGMENTERS

- Kojic Acid 4%
- Alpha Arbutin 3%
- Beta Arbutin 3%
- Azelaic Acid 9%
- Phytic Acid 5%
- Licorice Extract 5%
- Diolic Acid (Oct-Decenedioic Acid)
- Ascorbic Acid 5%
- Ferulic Acid 0.5% & Vitamin E 2%

***Lightenex® Gold Serum***  
***Actives***  
***DEPIGMENTERS***

- Kojic Acid 4%
- Alpha Arbutin 3%
- Beta Arbutin 3%
- Azelaic Acid 9%
- Phytic Acid 5%
- Licorice Extract 5%
- Dioic Acid (Oct-Decenedioic Acid) 4%
- Ascorbic Acid 5%
- Ferulic Acid 0.5% & Vitamin E 2%

# ***Kojic Acid 4% & Glycolic acid 8% Synergy***

## **DOCUMENTED SYNERGY**

- 39 patient split face study comparing Kojic Acid 2% & Glycolic Acid 5% with Hydroquinone 2% & GA 5% showed better results with Kojic Acid.

**REF-Dermat Surg 1996;22;443-447.Alica Garcia BS James F Fulton Jr MD.**

- Double Blind 80 patient Multi-ethnic study comparing Hydroquinone 4% with KA & GA combination showed both to be equally effective over 12 Weeks, with less side effects.

**REF-Draelos ZD,Yatskayerm et al.Dermatology Consulting Services,High Point,N Carolina,USA.**

## ***Azelaic Acid & Glycolic Acid***

Multicentre, randomized, double-masked study comparing

- Hydroquinone 4% with
- Azelaic acid & Glycolic Acid combination gave *equal* results.

**REF-clinic There 1998 Sept-Oct;20(5):960-70.**  
**Azelaic acid & GA combination therapy for facial Hyperpigmentation in darker skinned patients: a clinical comparison with HQ.**  
**Kakita LS, Lowe NJ.**



## **RETINALDEHYDE (RAL) 0.25% & GLYCOLIC ACID 8% (GA) gives more Retinoic acid (RA)**

The presence of GA converts RAL to Retinoic acid (RA)

This combination allows:

- delivery of high amounts of RA in the skin while,
- preventing the side-effects
- usually observed with high concentration of topical RA.

**REF-Dermatology 2005,Jan01;210 Supple1:6-13.**

**Pharmacology of RALGA,a mixture of  
Retinaldehyde&Glycolic acid.**

**Tran C Kasraee B et al.**

**Dept of Dermatology,University  
Hosp,Geneva,Switzerland.**

Azelaic Acid in the presence of Retinoic Acid  
is even more effective in  
Reducing hyper-pigmentation.

**REF-Cutis.1996 Jan;57 (1 suppl)  
36-45.Melanin Hyperpigmentation of  
skin Melasma, topical treatment with  
Azelaic acid & other therapies.  
Breathnack AS**

# **AZELAIC ACID 9%**

Azelaic acid only works on Hyperactive Melanocytes where DNA synthesis is fast.

- Powerful Inhibitor of enzyme Thioredoxin reductase.
- This enzyme adds electrons to Thioredoxin which can then activate Tyrosinase & also helps make DNA.

**Ref-Arch Dermatol Res1990;282(3).168-171.**

**A possible mechanism of action for Azelaic Acid in the human Epidermis.Schallenter KU et al,Dept of Dermatology,University of Hamburg,Germany.**

# AZELAIC ACID 9%

Proven as effective as Hydroquinone in Melasma.

- Azelaic acid has an anti-proliferative & Cytotoxic effect on Melanocytes.
- Gentle exfoliant -removes melanin loaded epidermal cells gently without irritation

**REF-DRUGS 1991 May;41(5):780-798.Azelaic acid.AReview og its Pharmacological properties&therapeutic efficiency in Acne&Hyper-pigmentary skin disorders..Fitton GA.Drug information service,Auckland,Australia.**

Retinaldehyde has  
depigmentation by  
followed by:

- Increasing epidermal turnover
- Decreases melanin synthesis
- Stratum corneum barrier to facilitate penetration of agents in the Epidermis

**REF-9 -Ortonne,JP  
Pigmentary disorders  
Therapy,19:280-283  
2006.00085.x**

# Alpha Arbutin 3%

Cultured Human Melanoma cells & three dimensional human skin model treated with Alpha Arbutin showed:

- 60% reduction in Melanin
- Melanin synthesis reduced by 24%
- Cellular tyrosinase activity significantly reduced.

**REF 1-Pharm Bull.2004 April;27(4):510-4.Inhibitory effects of alpha-arbutin on melanin synthesis in cultured human melanoma cells and a three-dimensional human skin model.Sugimoto K,Nishimura T,Nomura K,Kuriki T.Biochemical Research Laboratory,Ezaki Glico Co Ltd.,4-6-5 Utajima,Nishiyadogawa-ku,Osaka 555-8502,Japan.**

# Alpha Arbutin 3% & Beta Arbutin 3%

Lightenex® Gold contains both Alpha Arbutin & Beta Arbutins to reversibly & maximally inhibit the enzyme Tyrosinase.

Alpha and Beta Arbutin action on Tyrosinases from Mushroom & Mouse Melanoma showed:

- Beta Arbutin inhibited both Tyrosinases (showing non-competitive action).
- Alpha Arbutin only inhibited tyrosinase from mouse melanoma 10 times as strongly as Beta Arbutin showing mixed type inhibition.

**REF 2-Effects of alpha and beta arbutin on activity of Tyrosinases from mushroom and mouse melanoma. Funayama M, Arakawa R, Nishino T, Shin T, Murao S. Biosci Biotechnol Biochem. 1995 Jan;59(1):143-4.**

# Arbutin 6% total

Normal human skin micro flora can hydrolyze arbutin to Hydroquinone which shows more potent radical scavenging activity and Tyrosinase inhibition than Arbutin.

**REF-3-Hydrolysis of Arbutin to Hydroquinone by human skin Bacteria and its effect on anti-oxidant activity.J Cosmet Dermatol.2008Sept;7(3):189-193.Bang SH,Hans SJ,KimDH.Dept of Life and Nanopharmaceutical Sciences and College of Pharmacy,Kyung Hee University,Seoul,South Korea.**

#### Dioic Acid (Octadecene-dioic Acid) 4%

An in vitro comparative study of ROSCTV 5.0. On the skin of human subjects, the effect of a 4% octadecene-dioic acid (dioic acid) on the skin was compared with that of a 4% arbutin. The results showed that the dioic acid treatment was more effective than the arbutin treatment in reducing the skin pigmentation.

This study is a comparative study of ROSCTV 5.0. On the skin of human subjects, the effect of a 4% octadecene-dioic acid (dioic acid) on the skin was compared with that of a 4% arbutin. The results showed that the dioic acid treatment was more effective than the arbutin treatment in reducing the skin pigmentation.

**IC50 of Dioic Acid (Octadecene-dioic acid) compared with Arbutin in the treatment of Melasma. J Dermatol 2008; 40(5): 605-610. Bang SH, Hans SJ, Kim DH, et al. Kyung Hee University, Seoul, South Korea.**

## **Dioic Acid (Octadecene-dioic Acid) 4%**

An open comparative study of NINETY SIX (96 female) Melasma patients in an open, comparative, 12 week study between Dioic Acid 1% & Hydroquinone 2% showed:

- no significant difference between treatments. (same results)
- more pruritus (itching) with hydroquinone

This acid is a Di-carboxylic acid (dioic) like Azelaic but is 18 Carbon atoms long instead of 9 carbons like Azelaic.  
It is made from Bio-fermentation of Oleic acid using Yeasts.

**REF4-Efficacy of Dioc (Octadecene-dioic acid) compared with Hydroquinone in the treatment of Melasma. Int J Dermatol. 2009 Aug; 48(8):893-5. Tirado-Sanchez A, Santamaria-Roman A, Ponce-Olivera RM.**



## **Dioic Acid (Octadecene-dioic Acid) 4%**

A twenty patient placebo study on patients of Indian and Pakistani origin given 2% Octadecene-dioic acid over 8 weeks showed:

- A significant reduction in melanin
- ( $p < 0.025$ ) measured both by chromameter & mexameter.

**REF 5-Inter Jour of Cosmetic Science, Volume 33, issue 3 June, pages 210-221. J M Gillbro, M J Olsson. The Melanogenesis & mechanisms of skin lightening agents, existing & new approaches.**

## **Dioic Acid (Octadecene-dioic Acid) 4%**

In-Vitro studies using Octadecene-Dioic acid 2% in Melanoma cells showed that it binds to PPAR -gamma receptors on nuclear membrane of melanocytes to:

- Reduce tyrosinase production by 52%
- Reduce melanin synthesis by 46%
- Reduce Tyrosinase mRNA production by 54%

**REF6-Int Journ of Cosmetic Science-2005,27,123-132.A new mechanism of action for Skin Whitening agents:binding to PPAR.J W Weichers,A V Rawlings,C Garcia,C Chesne,P Balaguer,J C Nicholas,S Corre&M D Gilbert.Uniqema Skin R&D,Gouda,The Netherlands.A V R Consulting Ltd,26 Shavington way,Northwich,Cheshire,UK.Endocrinologie Moleculaire et Cellulaire des Cancers,Montpellier,France.Lab Genetique et Developpement,CNRS UMR6061,Faculty of Medicine,University of Rennes,1-2 Leon Bernard Avenue,35043 Rennes ,France.**

# ***Retinaldehyde 0.25%***

Retinaldehyde has been shown to improve depigmentation by one step conversion to Retinoic acid followed by:

- Increasing epidermal cell turnover (Epidermopoesis).
- Decreases melanosomal transfer of Melanin.
- Stratum corneum changes to affect the permeability barrier to facilitate the penetration of dispigmenting agents in the Epidermis.

**REF-9 -Ortonne,JP(2006):Retinoid therapy of Pigmentary disorders. Dermatologic Therapy,19:280-288doi:10.1111/j.15 29-8019.2006.00085.x**

## Ascorbic Acid 5%

16 patient slit-face randomized study in Melasma patients comparing Ascorbic acid 5% with Hydroquinone 4% showed no statistical Colorometric difference after 16 weeks.

Side effects recorded:

- ¥ Hydroquinone significantly high side effects (68%)
- ¥ Ascorbic acid only 6%

Ref: A double blind randomized trial of 5% ascorbic acid vs. 4% hydroquinone in melasma  
| International Journal of Dermatology |  
Volume 43, Issue 8, pages 604-607, Aug 2004 | Liliana Elizabeth Espinal Perez MD et al.

# Ferulic acid & Vitamin E synergy

An effective whitening agent

- Ferulic acid is a hydroxycinnamic acid that has significant anti-oxidant and anti-melanogenic activity.
- Tocopheryl ferulate is a significant inhibitor of Tyrosinase

**ref-12-The depigmenting effect of tocopheryl ferulate on human melanoma cells. Br J Dermatol.1999 Jul;141(1)141(1):20-9.**

**LICORICE EXTRACT  
5%**

LICORICE EXTRACT 5%-(GLABRIDIN):  
• Anti-inflammatory  
• Tyrosinase inhibitor.

REF-GLABRIDIN STUDY ON PHARMACLINIX CLINICAL TRIALS.

• Inhibition expected  
• Glabridin extract in

A split face of patients using 70% response

REF-Journal of Cosmetic Chemistry, 2003; 25(1): 1-10  
Laboratory of Dermatology, Migal, Galilee  
Shmone 11  
REF-Int J Dermatol 1999; 38(1): 1-10  
Liquertin in

# ***LICORICE EXTRACT***

## ***5%***

LICORICE EXTRACT 5%-  
(GLABRIDIN):

- Anti –inflammatory
- Tyrosinase inhibitor.

**REF-GLABRIDIN STUDY ON  
PHARMACLINIX CLINICAL  
TRIALS.**

## **LICORICE EXTRACT 5% (Glabridin, Glabrin, Isoliquertin)**

Glabridin powerfully inhibits both Tyrosinase isoenzymes T1&T3.

- Prevents Erythema & hyperpigmentation at 0.5% in skin from UV-light.
- Anti-inflammatory action by inhibiting Super-oxide anion production % Cyclo-oxygenase activity.

**REF-Pigment Cell Research 1998  
Dec;11(6):355-61.The Inhibitory effect of  
Glabridin from licorice extract on Melanogenesis  
& Inflammation.**

- Inhibition of Licorice extract on Tyrosinase is higher than expected from Glabridin alone.
- Glabrene & Isoliquertin (Chalcone) present in Licorice extract in Licorice extract inhibits Tyrosinase strongly.
- 

A split face controlled study in Egypt on 20 female Melasma patients using Isoliquertin cream over 10 weeks gave a 70% response & only 20% in Placebo patients.

**REF-Journal of Agricul Food  
Chem,2003,51(5),pp1201-1207.Ohad Nerya et al.  
Laboratory of natural compounds for Medicinal use,  
Migal,Galilea,Technological centre,PO BOX 831,Kiryat  
Shmona 11016.Israel.  
REF-Int J Dermatology 2000 Apr;39(4):299-301.Topical  
Liquertin improves Melasma. Amer M,Metwalli M,Dept  
of Dermatol, Zagazig, University of Egypt.**



Phytic acid chelates Copper & Iron in skin (makes them unavailable)

- Copper is essential part of the enzyme Tyrosinase which makes Melanin.
- Gentle exfoliant

**REF-Will Phytic acid replace Hydroquinone.  
Romulo Mene MD. Plastic Surgeon.Rio De  
Janiero,Brazil. Third Congress of National  
Estetic Medicine.Milan,Italy 12 Oct 2001**

- Iron catalyses free Radical Formation & subsequent Oxidative damage
- Phytic acid prevents Iron-driven hydroxyl radicle generation & prevents Lipid Peroxidation.
- Depigmenting agent, prevents Calcinosis cutis (calcium leaching) & premature ageing.
- Very well absorbed into skin

**REF-Journa.l Biol.Chem.1987 Aug  
25;262(24):11647-50.Phytic acid .A Natural Anti-oxidant. Graf E,Empson KL et al  
REF-Front Biosc 2005 Jan 1;10:799-802. Absorption of Myo-Inositol Hexakisphosphate through the skin; study of the matrix effects .Mechanism of Phytate topical absorption.**

A double blind, vehicle controlled trial in 30 healthy subjects with greater than 2 Solar Lentiginos were randomly signed to apply Ascorbic Acid 10% + Phytic Acid 2% over 3 months showed statistically significant improvement between study drug & vehicle.

**Ref: Journal of Cosmetic Dermatology | volume 10, issue 4, pages 266-272, Dec 2011 | Randomized controlled study to evaluate the depigmenting activity of L-Ascorbic acid plus Phytic Acid | Abdullah Khemis MD et al.**

## Lightenex® Gold Serum Works



[pharmaclinix.com](http://pharmaclinix.com)



**Retinol**  
Pharmaceutical grade Retinol is used in the formulation of Retinol products. It is a powerful anti-aging ingredient that helps to reduce the appearance of wrinkles and improve skin texture.

### AZELAIC ACID 9%

Proven as effective as Hydroquinone in Melasma.  
Azelaic acid has an anti-proliferative & cytotoxic effect on Melanocytes.  
Control exfoliation, improves barrier function, soothes sensitive skin, gently exfoliates.  
REF: DRUGS 1991; May; 41(5): 790-795. Azelaic acid. A Review of its Pharmacological properties and its efficacy in Acne vulgaris, pigmentation, skin disorders. Fitton G. Drug Information: British Association of Dermatologists, Australia.

**Pharmaceutical grade**  
Pharmaceutical grade Azelaic acid is used in the formulation of Azelaic acid products. It is a powerful anti-aging ingredient that helps to reduce the appearance of wrinkles and improve skin texture.

PharmaClinix® products are produced after extensive research using a unique combination of ingredients, designed to suit Asian & African skin.

### Alpha Arbutin 3% & Beta Arbutin 3%

Alpha Arbutin 3% & Beta Arbutin 3% are used in the formulation of Arbutin products. They are powerful skin brightening ingredients that help to reduce the appearance of dark spots and improve skin tone.



Lightnex Gold Serum

pharmaclinix.com

# PharmaClinix®

## Advanced Cosmeceuticals

UK's Top Selling – Professional skin care  
Scientifically designed for Asian & African skin.

### Ferulic acid & Vitamin E synergy

An effective whitening agent.  
Ferulic acid is a hydroquinone, and the top antioxidant and radical and anti-melanogenic activity.  
Retinoid's function is a significant inhibitor of Tyrosinase.

ref-12: The depigmenting effect of isocoumarin Retinoid on Human Melanocytes. *Int J Dermatol*. 1999; 38(14):1412-1414.

### Lightnex® Gold Serum

Contains Retinoids and highly purified Vitamin E.  
For all skin types.  
A 3-Phase Retinoid in a Creamy, non-irritating formula.

### CELLULOSE ACID 1%

Cellulose Acid 1% is used in the formulation of Cellulose Acid products. It is a powerful skin brightening ingredient that helps to reduce the appearance of dark spots and improve skin tone.

### RETINAL DEHYDE (RAL) 0.25% & GLYCOLIC ACID 8% (GA) gives more Retinoic acid (RA)

The precursor of GA converts RA, is Retinoic acid (RA).  
This combination allows:  
- delivery of high amounts of RA to the skin of the  
- increasing the rate of cell  
- evenly distributed skin to the appearance of natural skin.  
REF: *Dermatology* 2005; 211(4): 319-324.  
Pharmacology of RALGA, a mixture of Retinaldehyde Glycolic acid.  
Tan C. *Nature* 2006; 441(7100): 100-102.  
Dept of Dermatology, University of Hong Kong, Hong Kong.

### Arbutin 6% total

Normal human skin micro flora can hydrolyze arbutin to Hydroquinone which shows more potent radical scavenging activity and Tyrosinase inhibition than Arbutin.

REF-3: Hydrolysis of Arbutin to Hydroquinone by human skin Bacteria and its effect on anti-oxidant activity. *J Cosmet Dermatol*. 2008; Sept; 7(3): 189-193. Bang SH, Hans SJ, Kim DH. Dept of Life and Nanopharmaceutical Sciences and College of Pharmacy, Kyung Hee University, Seoul, South Korea.

